State of California—Health and Human Services Agency
California Department of Public Health

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August 30, 2011

Dale Harvey, Senior Water Resource Control Engineer
Regional Water Quality Control Board
1685 E Street
Fresno, CA 93706

Subject: Review of Tentative Waste Discharge Requirements (WDR) for Tejon Industrial Complex (TIC) - New East Water Reclamation Facility in Kern County (System No. 1590007)

Dear Mr. Harvey:

The California Department of Public Health (CDPH) provided comments pertaining to the tentative waste discharge requirements for Tejon-Castac Water District on May 13, 2011 under the premise that the Waste Discharge Requirements were to be adopted prior to the State of California Department of Public Health (CDPH) reviewing and approving a final Engineering Report (Production, Distribution, and Use of Recycled Water). Many of the comments were necessarily speculative in an effort to address uncertainties that remained with the recycled water project at that time. Postponement of adoption of the Waste Discharge Requirements has allowed the CDPH to receive and review the Updated Title 22 Engineering Report dated August 2011, which included the details of the UV disinfection system commissioning tests. In response to this change of events, the CDPH is reissuing its comments to better reflect the now known recycled water operation.

These comments are intended to supersede the comments provided in our previous letter dated May 13, 2011. The requirement that the Discharger shall comply with all of CDPH's acceptance conditions for the UV disinfection system should be explicitly stated in the Waste Discharge Requirements.

On behalf of the California Department of Public Health (CDPH), we have reviewed the tentative waste discharge requirements for Tejon-Castac Water District, Tejon Industrial Complex New East Wastewater Treatment Facility in Kern County and have the following comments:

1) The WDR states, under "*C. Ultraviolet Disinfection (UV) System Specifications:*

1. The Discharger shall provide continuous, reliable monitoring of flow, UV transmittance, UV intensity, UV dose, UV power, and turbidity.
2. The Discharger shall operate the UV disinfection system to provide a minimum UV dose of 80 millijoules per square centimeter (mJ/cm2) at all times, unless otherwise approved by CDPH.
3. The UV transmittance (at 254 nanometers) in the wastewater shall not fall below 65 percent of the maximum at any time, unless otherwise approved by CDPH.
4. The quartz sleeves and cleaning system components shall be visually inspected per the manufacturer's operation manual for physical wear (scoring, solarization, seal leaks, etc.) and to check the efficacy of the cleaning system.
5. The quartz sleeves shall be cleaned at fixed intervals to ensure the minimum required UV dose delivery is consistently achieved. Cleaning intervals shall not be established based on the presence of coliform organisms.
6. Lamps shall be replaced per the manufacturer's recommendation, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.
7. The Discharger shall comply with all of CDPH's acceptance conditions for the UV disinfection system in use at the WWTF.
8. Prior to initial discharge to the ponds, the Discharger shall submit to the Executive Officer a copy of the letter from CDPH stating that all the UV disinfection system pre-operation acceptance conditions specified by CDPH have been satisfied.
9. The UV disinfection system shall be operated in accordance with an approved operations and maintenance plan.

2) Replace C. 1. with "The Discharger shall provide continuous, reliable monitoring of flow, UV intensity, UV dose, and turbidity."

3) Replace C. 2. with "The Discharger shall operate the UV disinfection system to provide a minimum UV dose of 82 millijoules per square centimeter (mJ/cm^2) at all times. UV dose equations approved by CDPH must be used as part of the automatic UV disinfection control system for calculating UV dose. ."

4) Replace C. 3. with "The equation to be used as part of the automatic UV disinfection control system for calculating UV dose shall be the following:

$$RED_{calc} = 10^{[\,2.2414 - 0.7663 \times \log(Q) + 0.5534 \times \log(0.636 \times S)\,]}$$

Where:
S = Measured UV sensor value (mW/cm^2).
RED = RED calculated with the UV dose-monitoring equation (mJ/cm^2).
Q = Flow rate (gallons per minute [gpm]).

5) Replace C. 9. with "The facility should be operated in accordance with an approved operations plan, which specifies clearly the operational limits and responses required for critical alarms. The operations plan must be approved by CCDPH. The operations plan is part of the Engineering Report, Appendix G, which shall become an enforceable part of the permit. A copy of the approved operations plan should be maintained at the treatment plant and be readily available to operations personnel and regulatory agencies.

6) Add C. 10. "A quick reference plant operations data sheet should be posted at the treatment plant and include the following information:
    a. The alarm set points for tertiary turbidity, high flow, and UV dose.
    b. The values of high turbidity, high flow, and low UV dose, when flow must be diverted to waste.
    c. The required frequency of calibration for all monitoring equipment measuring turbidity, flow, and UV intensity.
    d. The required frequency of mechanical cleaning/wiping and equipment inspection.
    e. The UV lamp age tracking procedures and replacement intervals."

7) Add C. 11. "The UV system must be operated with a built-in automatic reliability feature that must be triggered when the system is below the target UV dose. Conditions that should divert flow include: inability to meet the minimum UV dose, intensity sensor failure, multiple lamp failure, or reactor failure."

8) Add C. 12. "There shall be no bypassing of untreated or partially treated wastewater from the plant or any intermediate unit processes to the point of use."

9) Add C. 13. "Any discharge of untreated or partially treated wastewater to the use area, and the cessation of same, shall be reported immediately by telephone to the RWQCB, CDPH, and the local health officer." Supplier shall immediately begin implementation of corrective action pursuant to the approved Operations Plan.

10) Add C. 14. "The plant shall be provided with a sufficient number of qualified personnel to operate the filtration and disinfection facility effectively so as to achieve the required level of treatment at all times. The number and type of operational personnel should be described in the operations plan that is part of the Engineering Report, Appendix G, which shall become an enforceable part of the permit. ."

11) Add C. 15. "A preventive maintenance program shall be provided to ensure that all equipment is kept in a reliable operating condition. A preventative maintenance program is a required part of the Engineering Report operations plan, Appendix G, which shall become an enforceable part of the permit."

12) Add C. 16. "UV intensity sensors and flow meters must be properly calibrated to ensure proper disinfection."

13) Add C. 17. "The plant shall have a minimum of one reference UV intensity sensor on site at all times. Measurements made by each duty UV intensity sensor shall be checked at least monthly using a reference UV intensity sensor. For all UV intensity sensors in use, the ratio of the duty UV sensor intensity to the reference UV sensor intensity must be less than or equal to 1.2. If the calibration ratio is >1.2, the failed duty UV sensor must be replaced by a properly calibrated sensor and recalibrated by a qualified facility. The reference UV intensity sensors shall be recalibrated at least annually by a qualified facility using a National Institute of Standards and Technology (NIST) traceable standard."

14) Add C. 19. "Flow meters measuring the flow through a UV reactor must be verified to determine accuracy at least monthly via checking the flow reading against other flow determination methods."

15) Add C. 20. "Equivalent or substitutions of equipment are not acceptable without an adequate demonstration of equivalent disinfection performance."

If you have any questions about this letter, please contact me at (661) 335-7318.

Sincerely,

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